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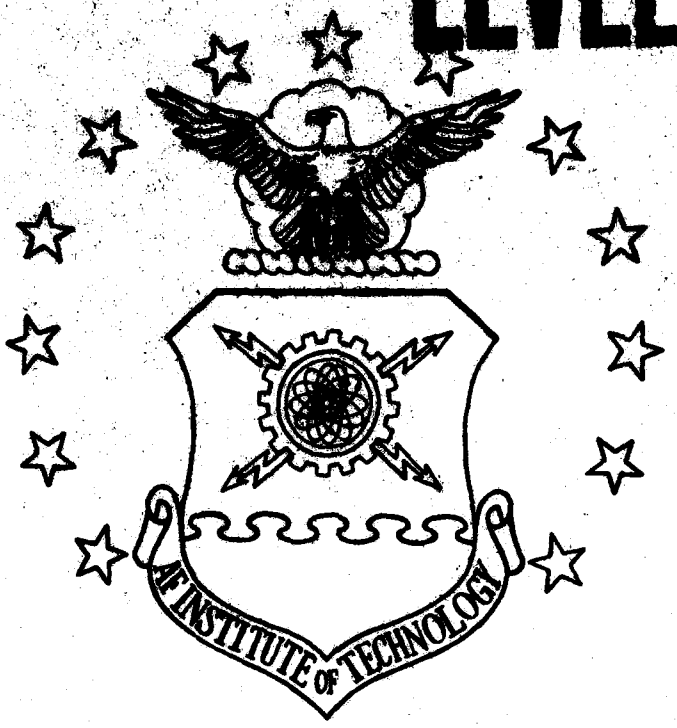

DEPARTMENT OF THE AIR FORCE
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AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

EFFECT OF WORK STABILITY, CLASSIFICATION, AND SEX ON ORGANIZATIONAL EFFECTIVENESS

William H. Hendrix, Lt Col, USAF

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Research was conducted to establish the effects of work stability, personnel classification (i.e., airman, officer, or civilian), and sex on three criteria of effectiveness (i.e., satisfaction, climate, and perceived productivity). Data were collected on 4786 military and civilian personnel located at five Air Force bases using the Organizational Assessment Package (OAP). A 1-way ANOVA was used to test for differences between work-stability levels and a 2-way ANOVA to test for differences between subject's classification and sex. Work-stability levels differed significantly ($p<.001$) with more stable levels having higher values for all three criteria. Airmen scored lower on all three criteria while female civilians were lower on satisfaction and perceived productivity.

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EFFECT OF WORK STABILITY, CLASSIFICATION, AND SEX ON ORGANIZATIONAL EFFECTIVENESS

A School of Systems and Logistics AU-AFIT-LS Technical Report

Air University

Air Force Institute of Technology

Wright-Patterson AFB, Ohio

By

William H. Hendrix
Lieutenant Colonel, USAF

November 1980

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EFFECT OF WORK STABILITY, CLASSIFICATION, AND SEX ON ORGANIZATIONAL EFFECTIVENESS

Introduction

Improving organizational effectiveness is an area of importance to most organizations. Various approaches have been utilized within various types of organizations in attempting to improve effectiveness. These include programs such as Management By Objectives (MBO), Survey Feedback, and team building. The Air Force has utilized many of the available approaches to improve effectiveness. One of the more elaborate programs involved the establishment of the Leadership and Management Development Center (LMDC) at Maxwell AFB, Alabama. One of the more recent approaches utilized by LMDC to identify problem areas involved identifying organizational problem areas and strengths through the administration of the Organizational Assessment Package (OAP) (Hendrix and Halverson, 1979).

Problem

A massive amount of data were collected by LMDC personnel during the OAP's validation process. In addition to validating the OAP, a need existed for analyzing the data to identify factors which were related to organizational effectiveness. This paper focuses on research to establish the effect of work stability, personnel classification (i.e., airman, officer, or civilian), and sex on three criteria of effectiveness.

Paper presented at the 88th Annual American Psychological Convention, Montreal, Canada, 1-5 September 1980.

Method

Subjects

Subjects consisted of 4786 military and civilian personnel located at five Air Force bases representing six major commands. The sample's composition was 2% non high school graduates, 39% high school or GED graduates, 37% some college work, 9% bachelor degress, 6% some graduate work, 6% master's degrees, 1% doctoral degrees; 78% white, 10% black, 5% hispanic, 7% listed as other than white, black or hispanic; 86% males, 14% females; 17% officers, 66% enlisted, and 17% civilians.

Survey Instrument

Data were collected using the Organizational Assessment Package (OAP), an attitudinal survey primarily containing 7-point likert scales (Hendrix and Halverson, 1979). The OAP included measures of areas relating to the job, one's supervisor, the organizational climate, the perceived productivity of one's work group, and satisfaction.

Data Analysis

In a previous study (Hendrix and Halverson, 1979), 22 OAP factors were extracted. Three of these factors were selected as dependent variables or effectiveness criteria for this study. They were: General Organizational Climate, Job-Related Satisfaction, and Perceived Productivity. Each subject's factor score was computed for each of the three criteria. These served as inputs to a 1-way Analysis of Variance (ANOVA) to test for significant differences between work stability levels and to a 2-way ANOVA to test for significant differences associated with subject's classification and sex. Those subjects which failed to respond to items associated with a given criterion were deleted from the analysis. The actual n associated with each

analysis are provided in the results section. Table 1 provides the three OAP items used for analysis (i.e., those of work stability, classification, and sex).

TABLE 1

Background Information Items Analyzed by ANOVA

Response Group	Item Statement
	How stable are your work hours?
1	1. Highly stable-routine 8 hrs
2	2. Very stable-nearly routine 8 hrs a day
3	3. Moderately stable-shift work which periodically changes
4	4. Slightly unstable-irregular working hours
5	5. Highly unstable-frequent TDYs, frequently on call
	You are an:
1	1. Officer
2	2. Airman
	3. Civilian (GS)
	4. Civilian (wage employee)
3	5. Non-Appropriated Fund (NAF) employee
	6. Others
	Your Sex Is:
1	1. Male
2	2. Female

Results

Analysis 1. Work-Hour Stability.

General. The analysis of variance summary tables for analysis 1 are provided in Table 2.

General Organizational Climate (n = 4108) and Job-Related Satisfaction (n = 3879). For both of these criteria, the analysis of variance summary table (Table 2) indicated a significant ($p<.001$) main effect. The Newman-Keuls Sequential Range Test indicated significant differences between all pairs of means.

Perceived Productivity (n = 4205). The analysis of variance summary table (Table 2) indicated a significant ($p<.001$) main effect. The Newman-Keuls Sequential Range Test indicated significant differences between response 3 (moderately stable) and all other response options. In addition, response 4 (slightly unstable) differed significantly from responses 1 and 2 (highly and very stable).

Discussion. The data indicate that the more unstable the working hours the lower the scores on the 3 criteria. This relationship was the most apparent for Job-Related Satisfaction, with a consistent decrease in the criteria indices as the work environment became more unstable. For General Organizational Climate and Perceived Productivity, the general relationship held; however, the lowest criterion values were obtained for moderately stable work hours, while the higher values were obtained for highly stable and very stable work hours.

TABLE 2

Analysis of Variance Summary Table for Stability of Work Hours

General Organizational Climate

Source	df	MS	F	p
Between Groups	4	18.3148	18.26	.001
Within Groups	4103	1.0031		
Total	4108			

Job-Related Satisfaction

Source	df	MS	F	p
Between Groups	4	154.0627	149.26	.001
Within Groups	3874	1.0322		
Total	3879			

Perceived Productivity

Source	df	MS	F	p
Between Groups	4	10.9659	9.13	.001
Within Groups	4200	1.2014		
Total	4205			

Analysis 2. Classification by Sex.

General Organizational Climate (n = 4086). The analysis of variance table for analysis 2 is provided in Table 3. For General Organizational Climate, only the main effects for classification (Cl) was significant ($p<.001$). Simple main effects indicated that classification for males and females were both significant beyond the .001 level. The Newman-Keuls Sequential Range Test for classification at s_1 (males) indicated significant differences between classification level cl_2 (airmen) and the other two levels (cl_1 - officers, cl_3 - civilians). For classification at s_2 (females), all classification levels differed significantly from each other.

Job-Related Satisfaction (n = 3858). Tests for main effects were significant for classification ($p<.001$) and sex ($p<.01$). Test for interaction was not significant. Test for simple main effects indicated that both classification at s_1 (males) and at s_2 (females) were significant beyond the .001 level. Test for simple main effects for sex at cl_3 (civilians) was significant ($p<.01$); however, the other classification levels were not significant. The Newman-Keuls Sequential Range Test for classification at s_1 (males) and at s_2 (females) indicated significant differences between classification level cl_2 (airmen) and the other two levels (cl_1 - officers, cl_3 - civilians).

The Newman-Keuls Sequential Range Test for sex at cl_3 (civilians) also indicated that male and female civilians significantly differed in their responses.

Perceived Productivity (n = 4181). Test for main effects was significant for classification ($p<.001$) but not for sex. Test for interaction (ClXS) was significant ($p<.02$). Tests for simple main effects indicated that classification at s_1 (males) and at s_2 (females) were significant beyond the .001 level.

TABLE 3

Analysis of Variance Summary Table for Classification (Cl) by Sex (S)

General Organizational Climate

Source	df	MS	F	p
Classification (Cl)	2	41.3886	43.0562	.001
Sex (S)	1	2.7258	2.8356	.092
Classification x Sex (C x S)	2	.9428	.9808	.375
Within Cell	4080	.9613		

Job-Related Satisfaction

Source	df	MS	F	p
Classification (Cl)	2	123.1778	111.9627	.001
Sex (S)	1	7.2402	6.5810	.010
Classification x Sex (C x S)	2	2.1804	1.9818	.138
Within Cell	3852	1.1002		

Perceived Productivity

Source	df	MS	F	p
Classification (Cl)	2	34.9528	29.5690	.001
Sex (S)	1	.0006	.0005	.982
Classification x Sex (C x S)	2	4.9702	4.2046	.015
Within Cell	4175	1.1821		

Simple main effects for sex by classification level cl_2 (airmen) and cl_3 (civilians) were significantly different at the .05 and .03 levels respectively. The Newman-Keuls Sequential Range Test for classification at s_1 (males) indicated that male airmen (cl_2) differed significantly from male officers (cl_1) and male civilians (cl_3). Classification at s_2 (females) indicated that female airmen (cl_2) differed from female civilians (cl_3).

The Newman-Keuls Sequential Range Test for sex at classification level cl_2 (airmen) and at cl_3 (civilians) also indicated male and female airmen and civilians differed significantly in their responses.

Discussion. The data indicate a general pattern for all three criteria. Officers and civilians scored higher on their criterion responses than did airmen. That is, officers and civilians perceived the General Organizational Climate and Productivity in their organizations to be better than did airmen. Also, officers and civilians were more satisfied with their jobs than were airmen. Another interesting difference which was limited to civilians was that males and females differed significantly in their responses. Female civilians were more satisfied with their jobs and perceived productivity to be higher than did male civilians. On the other hand, male civilians perceived the General Organizational Climate to be better than did female civilians.

Summary

This paper has focused on three factors to see if they were related to perceived organizational effectiveness. Work stability still appears to be a perceived problem in the Air Force. In addition, airmen scored lower on all three effectiveness criteria, and female civilians were lower on satisfaction

and perceived productivity criteria than were civilian men. Effectiveness should be able to be improved by providing more work stability and establishing the underlying reasons and modifying these variables to improve the effectiveness perception of airmen and female civilians.

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